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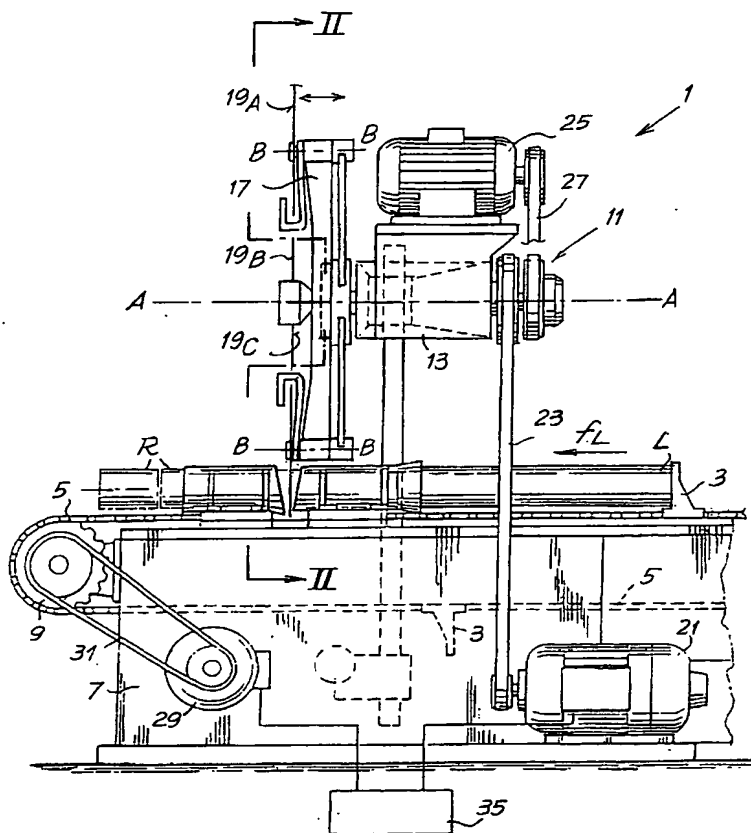
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(75) Inventors/Applicants (for US only): **CHIOCCHETTI**,Mario, Gioni [IT/IT]; Via del Tiglio, 612, Pieve di Compito, I-55065 Capannori, Lucca (IT). **GELLI, Mauro** [IT/IT]; Via del Marginone 24, Fraz. Pieve S. Paolo, I-55066 Capannori (IT).(74) Agents: **MANNUCCI, Michele** et al.; UFF. Tecn. Ing. A. Mannucci S.r.l., Via della Scala, 4, I-50123 Firenze (IT).(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: CUTTING MACHINE FOR CUTTING ELONGATED PRODUCTS



(57) Abstract: The cutting machine comprises at least one path for the products to be cut (L); at least one device (3, 5, 9) for feed of the products along said path, according to a direction of feed (f_L); an element (17) rotating around a main axis of rotation (A-A); on said rotating element, at least one disk-shaped blade (19A, 19B, 19C) rotating around its own axis of rotation (B-B), said blade being provided with alternate translatable motion, substantially parallel to the direction of feed. The disk-shaped blade moves axially in relation to the rotating element during rotation of said rotating element. Moreover, the translatable movement of the disk-shaped blade is controlled so that it moves in the same direction as the direction of feed of the products to be cut when the blade is engaged in said products to follow the feed of the products during cutting. Motion in the opposite direction to the direction of feed of the products is imparted on the blade in a period of time in which the blade is disengaged from said products.



ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/IT 03/00417

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 B26D3/16 B26D5/22 B26D7/12 A24C5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 B26D A24C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 4 041 813 A (SPENCER HARVEY J) 16 August 1977 (1977-08-16) column 8 -column 9; figures 10,11	1-7, 10-14, 19,20 8,9, 15-18, 21-25
X A Y	US 2 093 322 A (LAMOREAUX FRANK L) 14 September 1937 (1937-09-14) figure 2 figures 1,2	1-4,6,8, 9,19,20 7 11,12,14
X A	US 1 729 436 A (BRONANDER WILHELM B) 24 September 1929 (1929-09-24) figures 1,2	1,2,4,6, 7,9,19 3,8,20
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- "A" document defining the general state of the art which is not considered to be of particular relevance
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Date of the actual completion of the international search

24 February 2004

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INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 736 361 A (HITECH SYSTEMS SRL) 9 October 1996 (1996-10-09) the whole document	1-4, 6-9, 19, 20
X	US 4 347 771 A (BRADLEY JOHN J) 7 September 1982 (1982-09-07)	10-13
A	column 4, line 46 - line 60; figures 1-11	14-18, 21-25
X	WO 01 36151 A (BIAGIOTTI GUGLIELMO ; PERINI FABIO SPA (IT)) 25 May 2001 (2001-05-25)	10-14
A	the whole document	15-18, 21-25
Y	US 5 152 105 A (BELVEDERI BRUNO) 6 October 1992 (1992-10-06)	11, 12, 14
A	figures 1-3	13, 15-18, 21-25
A	EP 0 391 865 A (PERINI NAVI SPA) 10 October 1990 (1990-10-10) the whole document	11-18, 21-25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IT 03/00417

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/IT 03 00417

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-4,6-9,19,20

a cutting machine for elongated products

2. Claims: 5, 10-18, 21-27

a sharpening unit for a disc-shaped blade

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IT 03/00417

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